

* SWBAT solve problems involving change in velocity

Sep 6-2:31 PM

Welcome!!!

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* Pick up:

- slip of paper (for later)
- whiteboard, marker, eraser

Opening Question:

Something is accelerating if it is...

- CHANGING DIRECTION
- SPEEDING UP
- or - SLOWING DOWN



Centering...

What is it called if your pay changes?

SECA Physics
Tuesday 27 October 2015

Sep 7-7:04 AM

More rate practice...

PHYSICS VERSION

$$100 \text{ mi in } 5 \text{ hrs}$$

$$\frac{100 \text{ mi}}{5 \text{ hr}} = 20 \frac{\text{mi}}{\text{hr}}$$

* DJ gig last Saturday for \$100, takes 5 hours:
How much are you making per hour?

$$\frac{\$100}{5 \text{ hr}} = \$20/\text{hr}$$

$$\frac{100 \text{ mi}}{\text{wk}} + \frac{10 \text{ mi}}{\text{wk}} \cdot \text{wk}$$

* Good job, so you'll do the gig every week and get \$10 per gig **raise** each week:

What is the rate of change of your pay?

$$\$100/\text{wk} + \$10/\text{wk} \cdot \text{wk}$$

AFTER 5 WEEKS

$$100 \text{ mi} + \frac{10 \text{ mi}}{\text{wk}} \cdot 5 \text{ wk}$$

$$= 150 \text{ mi}$$

* How much will you make per gig 5 weeks from now?

$$\$100/\text{wk} + 5 \cdot \$10/\text{wk} = \$150$$

$$\text{SPEED:}$$

$$\frac{150 \text{ mi}}{5 \text{ hr}} = 30 \text{ mi/hr}$$

* How much will you make per hour then?

$$\$150/5 \text{ hr} = \$30/\text{hr}$$

* Running Back has 200 yards over the last 4 games.
What is his average yards per game?

* One excellent running back averages 100 yards/game. How many yards should we expect from him (total) over the next 3 games?

* Tendonitis in his knee. He's losing about 10 yards per game from his average each week. What will his yards per game be after 3 weeks of this?

Oct 19-7:20 AM

Catchy Physics Phrases: Speed, Velocity, Acceleration

Speed is

Change in distance over
change in time



$$\text{SPEED} = \frac{\Delta d}{\Delta t}$$

Velocity is

Speed with direction

EXAMPLE

$$\text{DIST} = \text{SPEED} \cdot \text{TIME}$$

$$5 \text{ m} = 1 \text{ m/s} \cdot 5 \text{ s}$$

Acceleration is

Change in **velocity** over
change in time



$$a = \frac{\Delta v}{\Delta t}$$

- SPEED UP - SLOW DOWN
- CHANGE DIRECTION

$$\text{VELOCITY} = \text{ACCEL} \cdot \text{TIME}$$

"g" is the acceleration due to gravity

On earth, it is about 10 m/s²

↓
= 9

$$\frac{10 \text{ m}}{\text{s} \cdot \text{s}} \cdot 3 \text{ s} = 30 \frac{\text{m}}{\text{s}}$$

Oct 4-7:27 AM

$$SPEED = \frac{\Delta d}{\Delta t}$$

$$DIST = SPEED \cdot TIME$$

$$a = \frac{\Delta v}{\Delta t}$$

$$VELOCITY = ACCEL \cdot TIME$$

ON EARTH

$$g = 10 \text{ m/s}^2$$

Changing rate practice

- Work alone or with one other person

- Do the worksheet

- Check with people around you!

When you're done:

Invent your own question about calculating acceleration

Oct 19-7:20 AM

Daily 3 Questions

- * Every day except test/project days
- * 3 Questions on the topics of the day
- * Main source of daily points
- * I am happy to give credit when I have no concerns about someone giving or getting help with the answers.

You can't get your points if you don't have your **NAME!!!**

Name	Period
1.	
2.	
3.	

Sep 9-7:32 AM

1. What is the speed of a bowling ball that moves 6 meters in 3 seconds?
2. Light travels in a straight line at a constant speed of 300,000 km/s. What is the light's acceleration?
3. If a freely falling rock on earth were equipped with a speedometer, by how much would its speed readings increase with each second of falling?

Oct 8-6:48 AM